

What is claimed is:

1. A structure of a radio frequency (RF) variable capacitor having a variable range of capacitance between a first minimum value and a first maximum value, the structure comprising:

a first capacitor, which has a variable range of capacitance between a second minimum value greater than the first minimum value and a second maximum value greater than the first maximum value; and

a second capacitor, which is connected in series to the first capacitor and has a capacitance of a fixed value.

2. The structure as claimed in claim 1, wherein the capacitance the second capacitor is determined according to a quality factor of the first capacitor and a variable range of capacitance between the second minimum value and the second maximum value.

3. The structure as claimed in claim 1, wherein the first capacitor includes a MOS capacitor.

4. The structure as claimed in claim 1, wherein the second capacitor is formed of one selected from the group consisting of a metal-insulator-metal (MIM) capacitor, a fractal capacitor and a polystyrene capacitor.

5. The structure as claimed in claim 1, wherein the second capacitor is formed on a gate electrode of the first capacitor.

6. The structure as claimed in claim 1, wherein the second capacitor is formed on a drain or source electrode of the first capacitor.

7. A method of manufacturing a radio frequency (RF) variable capacitor having a variable range of capacitance between a first minimum value and a first maximum value, the method comprising:

(a) forming a first capacitor, which has a variable range of capacitance between a second minimum value greater than the first minimum value and a second maximum value greater than the first maximum value, using a MOS process; and

(b) forming a second capacitor, which is connected in series to the first capacitor formed in step (a) and has a capacitance of a fixed value.

8. The method as claimed in claim 7, wherein the capacitance of the second capacitor is determined according to a quality factor of the first capacitor and a variable range of capacitance between the second minimum value and the second maximum value.

9. The method as claimed in claim 7, wherein the second capacitor is formed of one selected from the group consisting of a metal-insulator-metal (MIM) capacitor, a fractal capacitor and a polystyrene capacitor.

10. The method as claimed in claim 7, wherein the second capacitor is formed on a gate electrode of the first capacitor.

11. The method as claimed in claim 7, wherein the second capacitor is formed on a drain or source electrode of the first capacitor.